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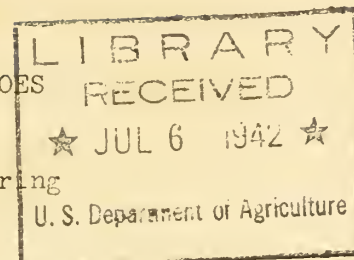


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# INFORMATION SHEET ON DEHYDRATED SWEET POTATOES

The Dehydration Committee  
U. S. Bureau of Agricultural Chemistry and Engineering  
U. S. Department of Agriculture



## FOREI:

Sweet potatoes are dehydrated in the form of slices, cubes, strips, riced and powder. Prior to drying the first three types are partially cooked or "blanched." It is necessary that they be rehydrated by soaking in water before using. After rehydration, the potatoes can be cooked in the same way as fresh potatoes, somewhat less cooking time being required.

The riced and powdered types are practically completely cooked and need only a short soaking in hot water before use.

The dehydrated products must be made under modern sanitary conditions, in accordance with best commercial practice and Federal and State Pure Food Laws and Regulations.

## VARIETIES:

Both the soft "yam" varieties and the hard starchy varieties are suitable for drying. The products are different and mixtures of the two types should not be made. Puerto Rican, Maryland Sweets, Key West, Jersey and Nancy Hale varieties have been found satisfactory for drying. Prolonged storage causes deterioration of the raw stock with a resulting poor quality of the finished goods. Such potatoes should not be used for dehydration. On account of the difference among varieties, and in a variety when grown under diverse soil and climatic conditions, it is impossible to state definitely whether any particular variety will or will not be satisfactory when grown in a given place.

## PREPARATION:

Only clean sound sweet potatoes should be used for dehydration. The potatoes must be thoroughly washed so that dirt is removed. Subsequent steaming for 10 minutes facilitates peeling. Abrasive peelers cause a heavy loss when used on either raw or steamed potatoes. Hand, lye, flame or other peeling methods may be used.

The potatoes should be cut as follows: slices, from 3/16" to 5/16" thick; cubes, from 3/16" to 6/16" on a side; strips, not less than 3/4" in length, and in cross-section, not less than 3/16" or more than 6/16". Immediately after slicing, the pieces must be thoroughly washed by strong sprays of clean cold water in order to remove starch from the cut surfaces. If not blanched immediately, the cut material must be kept under running cold water or in a clean 1 to 2% salt solution. In no case should the material be held more than one hour.

## PEELING AND TRIMMING LOSS:

Waste will run from 25 to 30%.

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### BLANCHING:

For slices of the above thickness, blanching in flowing steam at not less than 190° F. should be for about 6 minutes or until the product is translucent throughout. It is essential to avoid all contact with iron during blanching. Failure to observe this precaution will result in blackening of the product. After blanching, the product should be immediately dried and under no circumstances should be held for more than 1 hour before drying.

### TRAYING:

The material can be spread on the drying surface at the rate of 1-1/4 pounds per square foot. At this rate, slices will overlap but drying will not be retarded if washing prior to blanching has been adequate.

### DRYING TEMPERATURES:

Finishing temperatures should not exceed 165° F.

### MOISTURE CONTENT:

The moisture content of the dried product must not exceed 7% when packed ready for shipment.

### YIELD:

The yield will be from 28 to 31% based on the weight of the fresh unprepared material.

### VITAMIN CONTENT:

When properly prepared and dried, 100 grams of the freshly dried product will contain approximately: 5 milligrams pro-vitamin A (carotene), 200 micrograms vitamin B<sub>1</sub> (thiamin), 320 micrograms vitamin B<sub>2</sub> (riboflavin) and 35 milligrams vitamin C (ascorbic acid). These figures are for the Puerto Rican variety as grown in California.

No guarantee on vitamin content of the dried product should be given.

### " RICED AND POWDERED SWEET POTATOES

The chief difference between these and the cut types of sweet potatoes is that the former are practically precooked before drying. To make the riced product, the potatoes are given the same preliminary treatment as in the case of the cut potatoes except that instead of cutting, the whole tubers are steamed until thoroughly cooked. The cooked material is then passed through a ricing device with holes not over 1/8" in diameter. If the ricing is done while the potato is hot,

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there is less tendency for the strings to stick together on the tray or drying surface. Preferably the strings should fall directly from the ricer on the drying surface.

The best conditions for drying are the same as for the cut forms, but the rate of drying is higher.

Sweet potato powder can be made by grinding the dried riced potato, by passing the thoroughly cooked potato through a double drum drier or over a single drum drier.

The utility of the riced and powdered products is limited by the absence of a definite shape.

The moisture content of the dried products must not exceed 7% when packed ready for shipment.

Detailed specifications covering purchases are issued by the Office of the Quartermaster General of the U.S. Army and by the Agricultural Marketing Administration of Washington, D. C.

If further detailed information is desired, inquiries should be addressed to

The Dehydration Committee  
Bureau of Agricultural Chemistry and Engineering  
U.S. Department of Agriculture  
Washington, D. C.

or to

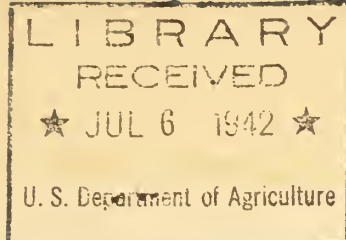
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## INFORMATION SHEET ON DEHYDRATED WHITE OR IRISH POTATOES

The Dehydration Committee  
U. S. Bureau of Agricultural Chemistry and Engineering  
U. S. Department of Agriculture

### FORM:

Potatoes are dehydrated in the form of slices (Lyonnaise), cubes (scalloped), strips (French fried), and riced (mashed). Prior to drying, the first three types are partially cooked or "blanched." It is necessary that they be rehydrated by soaking in water before using. After rehydration, the potatoes can be cooked in the same way as are fresh potatoes, somewhat less cooking time being required. The riced type is practically completely cooked and needs only a short soaking in hot water before use.

The dehydrated products must be prepared under modern sanitary conditions, in accordance with best commercial practice and Federal and State Pure Food Laws and Regulations.

### VARIETIES:

Preference is given to varieties that are mealy after cooking by boiling. Potatoes that are dark colored or soggy after cooking should not be used. The Idaho Russet types are satisfactory. Oregon Gems, Klamath Russets and Burbanks are also good. Satisfactory products have been made from Irish Cobbler, Early Ohio, Chippewa and Bliss Triumph varieties.

It is not possible to state definitely that any variety will or will not be satisfactory when grown under varying conditions. Any type or variety which meets the above conditions may be used for dehydration.

### PREPARATION:

Only clean sound potatoes should be used for dehydration. The potatoes must be thoroughly washed so that all dirt is removed. When abrasive peelers are used, tubers should be sized, otherwise excessive losses may ensue. Irregular shapes should be avoided, if wastage is to be kept to a minimum. All potatoes darken to some extent after peeling; some varieties darken rapidly, others slowly, and some may turn red. These discolorations can be prevented by immediately placing the peeled tubers in cold running water or in a dilute salt solution (1 to 2%). After peeling, the eyes and any discolored spots must be trimmed out. Any spots left will show up in the rehydrated material and may result in rejection of the whole lot. Care in peeling and trimming will cut down the wastage to no small degree.

The potatoes should be cut as follows: slices, from 3/16" to 4/16" thick; cubes, from 3/16" to 6/16" on a side; strips, not less than 3/4" in length and in cross-section, not less than 3/16" and not

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more than 6/16". Preferably the cut potatoes should be placed directly on the trays or belt on which they are to be blanched. Immediately after cutting the pieces should be washed thoroughly by strong sprays of cold clean water in order to remove starch from the cut surfaces. If not blanched immediately the cut material must be kept under running cold water or in a clean 1 to 2% salt solution. In no case shall the material be so held for more than one hour.

### PEELING AND TRIMMING LOSS;

Waste will run from 17 to 25%.

### BLANCHING:

The pieces are blanched in flowing steam at not less than 190° F. until translucent, usually about 3 minutes. Care must be taken that the steam reaches all pieces; in order to prevent "case-hardening." Case-hardening is a condition which develops when dehydration is attempted at too high a temperature and too low relative humidity. It consists of the formation of a horny shell which slows up both dehydration and rehydration. Water blanching or "series" blanching in water results in greater vitamin losses than where steam is used.

### TRAYING:

There should be a minimum of overlapping on the drying surface. If, however, the slicing and spraying have been carefully done, trouble from sticking will not be too great. Too heavy loading will increase the drying time. Strips are usually loaded 1-1/4 lbs. to the square foot; slices 3/4 to 1 lb.; dice up to 1 to 1-1/4 lbs.

### DRYING TEMPERATURES:

Finishing temperatures should not exceed 150° F.

### MOISTURE CONTENT:

The moisture content of dehydrated potato strips, slices or cubes must not exceed 6% when packed ready for shipment.

### YIELD:

The yield will be from 15 to 17% based on the weight of the fresh unprepared product.

### VITAMIN CONTENT:

When properly prepared, the freshly dried product will contain approximately 425 micrograms of vitamin B<sub>1</sub> (thiamin), 250 micrograms



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of vitamin B<sub>2</sub> (riboflavin), and 25 milligrams of vitamin C (ascorbic acid) per 100 grams. No guarantee of vitamin content of the products should be given.

#### PRECOOKED POTATOES (RICED):

The chief difference between this and the other types of dehydrated potatoes lies in the fact that this form is precooked before drying. After washing, the tubers are peeled and thoroughly precooked. When soft, they are passed through the ricing device and the strings dropped directly onto the trays. If riced while hot, the strings do not have such a tendency to stick together or to the trays. The strings should not be over 1/8 inch in diameter. Drying is similar to the other forms but is accomplished in a much shorter time.

The moisture content of the finished product must not exceed 7% when packed ready for shipment.

Detailed specifications covering purchases are issued by the Office of the Quartermaster General of the U.S. Army and by the Agricultural Marketing Administration in Washington, D. C.

If further detailed information is desired, inquiries should be addressed to

The Dehydration Committee  
Bureau of Agricultural Chemistry and Engineering  
U.S. Department of Agriculture  
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The Dehydration Committee  
Bureau of Agricultural Chemistry and Engineering  
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800 Buchanan Street  
Albany, California.

